Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method for identifying an agent effective at inhibiting short heterodimer protein (SHP) or farnesoid X receptor (FXR) comprising:

administering an agent to a cell culture that expresses (i) short heterodimer protein (SHP) or (ii) farnesoid X receptor (FXR) and comprises a NF-κB promoter/detectable substance gene reporter; and

selecting agents that cause an increase in the detectable substance in the cell culture.

2. (Original) The method of claim 1, wherein the agent is a small molecule, an antisense oligonucleotide, an antibody, a recombinant SHP, a recombinant FXR or a combination thereof.

3. (Original) The method of claim 2, wherein the agent is a small molecule having a molecular weight of about 50 to about 1500.

4. (Original) The method of claim 1, wherein the detectable substance gene is firefly luciferase gene, β-galactosidase gene, secreted alkaline phosphatase gene, renilla luciferase gene or combination thereof.

5. (Original) The method of claim 1, wherein the detectable substance gene is firefly luciferase gene.

6. (Original) The method of claim 1, wherein the cell culture is an altered cell culture.

7. (Original) The method of claim 1, wherein the cell culture is a transfected cell culture.

8. (Original) The method of claim 1, wherein the cell culture is an infected cell culture.

9. (Original) The method of claim 1, wherein the SHP, FXR or promoter/detectable substance gene reporter is introduced to the cell culture by a vector selected from any of adenovirus, plasmid, retrovirus or combinations thereof.

10. (Original) The method of claim 9, wherein the vector is an adenovirus.

11. (Original) The method of claim 10, wherein the adenovirus is a replication-defective adenovirus.

12. (Original) The method of claim 11, wherein the replication-defective adenovirus comprises an SV40 promoter, a CMV promoter, an MLP promoter or a combination thereof.

13. (Original) The method of claim 12, wherein the replication-defective adenovirus comprises an SV40 promoter.

14. (Original) The method of claim 1, wherein the cell culture is any of HELA, human hepatoblastoma cell line (HepG2), human embryonic kidney 293 cell line (HEK293), rat FTO-2B, rat McA-RH7777 or combination thereof.

15. (Original) The method of claim 1, further comprising cloning NF-κB promoter for use in preparing the NF-κB promoter/detectable substance gene reporter.

16. (Original) The method of claim 1, wherein the NF-κB promoter comprises inflammatory genes intracellular adhesion molecule (ICAM-I) or macrophage-colony stimulating factor (M-CSF).

17. (Original) The method of claim 1, additionally comprising administering the agent to a second cell culture that expresses short heterodimer protein (SHP) and comprises a CYP7A1 or CYP8B1 promoter/detectable substance gene reporter to detect an increase in the detectable substance in the second cell culture.

18. (Original) The method of claim 1, additionally comprising cloning NF-κB promoter and inserting the cloned NF-κB promoter into a vector ahead of a detectable substance gene to form a NF-κB promoter/detectable substance gene reporter prior to infecting a cell culture, wherein the NF-κB promoter comprises inflammatory genes intracellular adhesion molecule (ICAM-I) or macrophage-colony stimulating factor (M-CSF).

19. (Original) The method of claim 1, additionally comprising administering the candidate agent to a second cell culture that expresses short heterodimer protein (SHP) and hepatocyte nuclear factor 4α (HNF4α) and comprises a CYP7A1 or CYP8B1 promoter/detectable substance gene reporter to detect an increase in the detectable substance in the second cell culture.

20. (Original) The method of claim 1 additionally comprising:

(a) administering the agent to a second cell culture, said second cell culture comprising a NF-κB promoter/detectable substance gene reporter and not expressing SHP or FXR; and

(b) selecting for agents that cause an increase in the detectable substance in the

first cell culture and cause no increase in the detectable substance in the second cell culture following administration of the agent.

21. (Currently amended) A method of preventing or ameliorating a condition associated with inflammatory gene activity and/or cholesterol biosynthesis in a subject comprising:

administering an agent selected by the method of ~~any of claims 1-20~~ claim 1 above to said subject.

22. (Currently amended) A composition comprising an agent selected by the method of ~~any of claims 1-20~~ claim 1 above.

23. (Original) The composition of claim 22, which additionally comprises a pharmaceutically-acceptable carrier.

24. (Original) The composition of claim 22, wherein the agent is a small molecule, an antisense oligonucleotide, an antibody, a recombinant SHP, a recombinant FXR or a combination thereof.

25. (Original) The composition of claim 24, wherein the agent is a small molecule having a molecular weight of about 50 to about 1500.

26. (Original) A composition comprising:

an agent characterized as causing an increase in luciferase when administered to a cell culture infected, transfected or altered with a vector comprising a nuclear transcription factor NF-κB promoter/luciferase (luc) gene reporter, said cell culture expressing short heterodimer protein (SHP) or farnesoid X receptor (FXR).

27. (Original) The composition of claim 26, wherein the agent is a small molecule, an antisense oligonucleotide, an antibody, a recombinant SHP, a recombinant FXR or a combination thereof.

28. (Original) The composition of claim 27, wherein the small molecule has a molecular weight of about 50 to about 1500.

29. (Original) The composition of claim 27, wherein the small molecule has a molecular weight of about 50 to about 750.

30. (Original) The composition of claim 27, wherein the small molecule has a molecular weight of about 50 to about 500.

31. (Original) The composition of claim 27, wherein the small molecule is a nonsteroidal compound.

32. (Original) The composition of claim 26, wherein the vector is any of adenovirus, plasmid, retrovirus or combinations thereof.

33. (Original) The composition of claim 32, wherein the vector is an adenovirus.

34. (Original) The composition of claim 33, wherein the adenovirus is a replication-defective adenovirus.

35. (Original) The composition of claim 34, wherein the replication-defective adenovirus comprises an SV40 promoter, a CMV promoter, an MLP promoter or combinations thereof.

36. (Original) The composition of claim 34, wherein the replication-defective adenovirus comprises an SV40 promoter.

37. (Original) The composition of claim 26, wherein the cell culture is HELA, human hepatoblastoma cell line (HepG2), human embryonic kidney 293 cell line (HEK293), rat FTO-2B, rat McA-RH7777 or combinations thereof.

38. (Original) The composition of claim 26, wherein the NF-κB promoter comprises inflammatory genes intracellular adhesion molecule (ICAM-I) or macrophage-colony stimulating factor (M-CSF).

39. (Original) The composition of claim 26, wherein the agent inhibits the activity of short heterodimer protein (SHP) or farnesoid X receptor (FXR) in the inflammatory gene expression pathway.

40. (Original) The composition of claim 26, wherein the agent binds to the mature or immature form of short heterodimer protein (SHP) or farnesoid X receptor (FXR) or gene encoding same; said agent being present in the composition in an amount effective against atherosclerosis.

41. (Original) The composition of claim 26, wherein the agent competes with the mature or immature form of short heterodimer protein (SHP) or farnesoid X receptor (FXR) for a receptor or ligand.

42. (Original) The composition of claim 26, wherin the NF-κB promoter comprises inflammatory genes intracellular adhesion molecule (ICAM-I) or macrophage-colony stimulating factor (M-CSF).

43. (Original) A promoter/detectable substance gene reporter comprising:

an NF-κB promoter and a detectable substance gene, said NF-κB promoter positioned in front of the detectable substance gene.

44. (Original) The promoter/detectable substance gene reporter of claim 43, wherein the NF-κB promoter/detectable substance gene reporter is introduced to a vector.

45. (Original) The promoter/detectable substance gene reporter of claim 44, wherein the vector is a replication-defective adenovirus vector.

46. (Original) The promoter/detectable substance gene reporter of claim 45, wherein the replication-defective adenovirus vector comprises an SV40 promoter, a CMV promoter, an MLP promoter or combinations thereof.

47. (Original) The promoter/detectable substance gene reporter of claim 45, wherein the replication-deficient adenovirus vector comprises an SV40 promoter.

48. (Original) The promoter/detectable substance gene reporter of claim 43, wherein the composition further comprises a vector comprising a polynucleotide expressing short heterodimer protein (SHP) or farmesoid X receptor (FXR).

49. (Original) The promoter/detectable substance gene reporter of claim 43, wherein the NF-κB promoter comprises inflammatory genes intracellular adhesion molecule (ICAM-I) or macrophage-colony stimulating factor (M-CSF).

50. (Original) The promoter/detectable substance gene reporter of claim 44, wherein said vector is introduced into a host cell.

51. (Original) An isolated CYP7A1 or CYP8B1 promoter comprising:

a polynucleotide comprising the nucleic acid sequence of SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 or a combination thereof.

52. (Original) The promoter of claim 51, wherein the CYP8B1 promoter comprises the fragment of CYP8B1 from nucleotide –514 to +303 relative to the transcription initiation site of human CYP8B1.

53. (Original) The promoter of claim 51, wherein said promoter is introduced to a detectable substance gene to form a promoter/detectable substance gene reporter.

54. (Original) The promoter of claim 53, wherein the detectable substance gene is firefly luciferase gene, β-galactosidase gene, secreted alkaline phosphatase gene, renilla luciferase gene or a combination thereof.

55. (Original) The promoter of claim 53, wherein the detectable substance gene is firefly luciferase gene.

56. (Original) The promoter of claim 53, wherein the promoter/detectable substance gene reporter is introduced into a vector.

57. (Original) The promoter of claim 56, wherein the vector is adenovirus SV40.

58. (Original) The promoter of claim 51, wherein the promoter is introduced into a host cell.

59. (Original) A composition comprising:

a non-naturally deactivated short heterodimer protein (SHP) or farnesoid X receptor (FXR) complex.

60. (Original) The composition of claim 59, which additionally comprises a pharmaceutically-acceptable carrier.

61. (Original) The composition of claim 60, wherein the pharmaceutically-acceptable carrier is a chewable tablet, quick dissolve tablet, effervescent tablet, reconstitutable powder, elixir, liquid, solution, suspension, emulsion, tablet, multi-layer tablet, bi-layer tablet, capsule, soft gelatin capsule, hard gelatin capsule, caplet, lozenge, chewable lozenge, bead, powder, granule, particle, microparticle, dispersible granule, cachet, douche, suppository, cream, topical, inhalant, aerosol inhalant, patch, particle inhalant, implant, depot implant, ingestible, injectable, infusion, health bar, confection, animal feed, cereal, cereal coating, food, nutritive food, functional food or combination thereof.

62. (Original) The composition of claim 60, wherein said composition additionally comprises a pharmaceutically-acceptable buffer, diluent, adjuvant or combination thereof.

63. (Original) A composition comprising:

an agent that binds to any of SEQ ID NOS:1-4.

64. (Original) The composition of claim 63, wherein the agent is an antisense oligonucleotide to any of SEQ ID NO:1 or SEQ ID NO:3.

65. (Original) The composition to claim 63, wherein the agent is an antibody to any of SEQ ID NO.2 or SEQ ID NO:4.

66. (canceled)

67. (canceled)